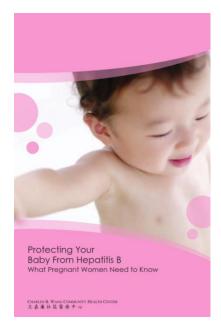
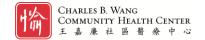
The Hep B Moms Program: A Primary Care Model for Management of Hepatitis B in Pregnancy



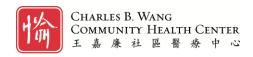
Janice Lyu, MS
Senior Hepatitis B Program Associate
Charles B. Wang Community Health Center (CBWCHC)



Charles B Wang Community Health Center (CBWCHC) in NYC

- Non-Profit & Federally Qualified Health Center
- Multidisciplinary care- primary care (adult, pediatric, OB/ GYN), specialists, social work, dental, mental health
- Serve more than 50,000 patients and 275,000 service visits in 2015
- Research and Evaluation Department
- Health Education, Marketing & Communications Departments





How many chronic hepatitis B (HBV) patients do we see?

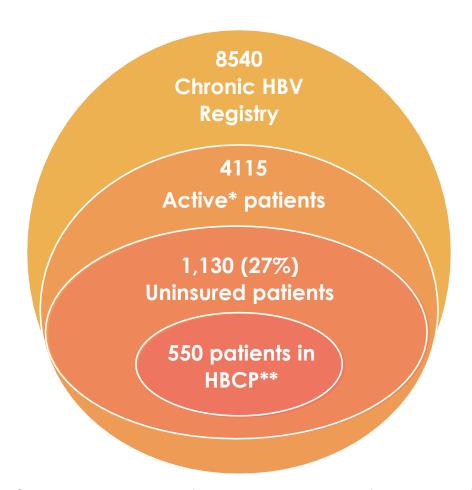
Serves a largely Chinese population in greater New York with a high prevalence of HBV

1 in 8 (~13%) CBWCHC patients have current infection (HBsAg+)

1 in 2 (~52%) CBWCHC patients have been exposed to HBV at one point in their life (anti-HBc+)

The OB/ GYN dept at CBWCHC sees...

~1100 pregnancies a year ~13% with maternal HBsAg+



Active CHB patients were seen for an annual physical or follow-up visit from 9/1/15 to 9/1/2017

**HBCP = Hep B Care Program for high risk uninsured chronic HBV patients include care management and subsidized imaging tests

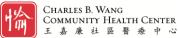


Cases of HBV Infected Infants at CBWCHC (2007-10)

From 2007-2010, 5 infants at CBWCHC acquired HBV via vertical transmission Cases of VT were examined to identify gaps in care Hep B Moms program was formed from the lessons learned

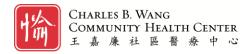
Last recorded viral load before delivery (copies/mL)	Discuss antiviral tx	Anti- viral Tx	Date & Type of delivery	HBIG	Sent to China ?	Initial HBsAg+ Test (infant)	Assessment
118,000,000	N	N	3/08 CS	Y	Y	35 mo	No antiviral tx and VL >10^8, infant went to China at 6 mos, late serology
1,422,000,000	Y	N	3/09 NSVD	N	Z	8 mo	No HBIG given by hosp, no antiviral tx and VL >10^9 copies/ml
911,000,000	Y	LAM for 6 wks	4/09 NSVD	Y	N	10 mo	Antiviral Tx prescribed, but VL still >10^8 c/ml and HBV transmission in sibling
UN	UN	UN	10/09 NSVD	Y	N	9 mo	Mother was not CBWCHC pt.
UN	N	N	12/10 CS	Y	Y	9 mo	Mother was not CBWCHC pt., but was on antiviral before pregnancy and discontiinued during pregnancy

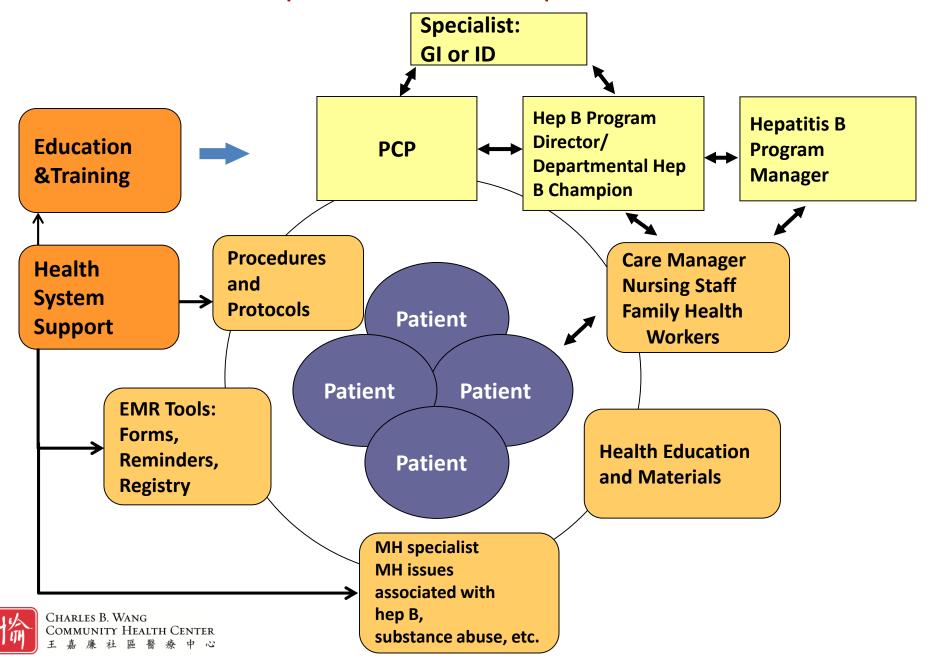
All mothers with lab data were HBeAg+. No infants were breastfed. All infants completed HBV vaccine series

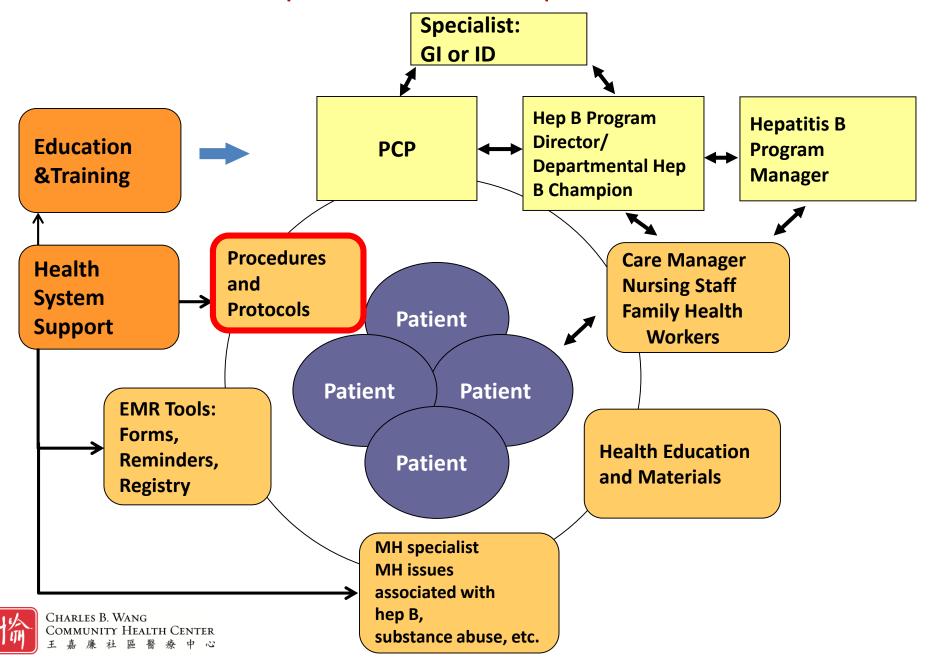


Hep B Mom Program

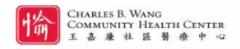
- Goal to prevent perinatal transmission and fill the gaps between transitions of care for mother and infant (OB/HBV provider/delivery hospital/pediatrician)
- HBV tested early in pregnancy and assessed for existing care and if not, referred to CBW IM
- Patients are identified from Women's Health OB Case Management report run biweekly
 - Care Manager provides face-to-face counseling
 - Links patients to hepatitis B care during and after pregnancy







CBWCHC Policies and Procedures for Screening, Vaccination, and Management of Hepatitis B During Pregnancy



Title:	Section: Departmental Policies and Procedures Department: OB/GYN Shared with: Internal Medicine Effective Date: April 28, 2014					
Screening, Vaccination and Management						
of Hepatitis B During Pregnancy						
	Supersedes: February 1, 2016					
Author(s): Allan Ho, MD, MPH Amy Shen Tang, MD	Reviewer(s): Samuel Wong, MD Perry Pong, MD	Last Updated Date: December 22, 2016 Date Discontinued: N/A				

Keywords: Hepatitis B; Hepatitis B Vaccine; Hepatitis B immunoglobulin; Hepatitis B Guidelines; vertical transmission, perinatal infection; immunoprophylaxis.

PURPOSE:

- Identify pregnant women at risk of hepatitis B virus (HBV) infection and vaccinate those women susceptible to HBV infection
- · Identify and manage pregnant women with chronic HBV (CHB) infection
- · Reduce the risk of HBV vertical transmission during the perinatal period

SCOPE: All patients receiving obstetrical care

POLICY:

The Charles B. Wang Community Health Center (CBWCHC) reviews and adapts guidelines for screening, diagnosis and management of hepatitis B infection from the most current recommendations by the: Centers of Disease Control and Prevention (CDC), Advisory Committee on Immunization Practices (ACIP), American College of Obstetrics (ACOG), and the American Association for the Study of Liver Diseases (AASLD).

PROCEDURE:

- 1. Coordination of Care for HBV Infection During Pregnancy:
 - Since the prevalence of Hep B is high in our patient population, all OB providers are to keep current on the management of HBV during pregnancy.
 - For patients not co-managed with gastroenterologists, hepatologists, or internists, follow up arrangements for after pregnancy care should be made at or before patients' post-partum visits.
 - c. For patients co-managed with other providers, the OB provider maintains the

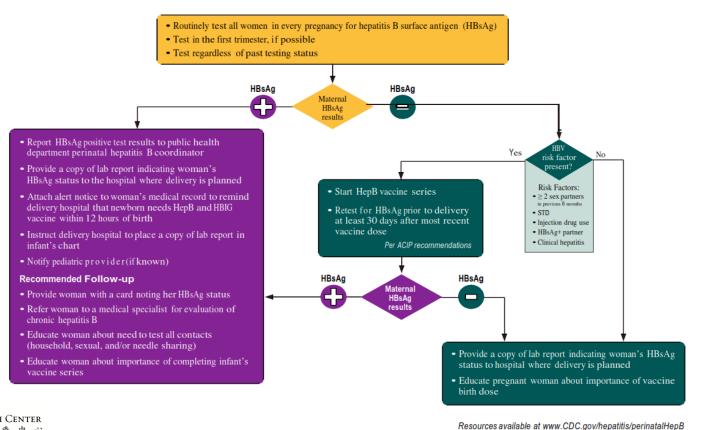


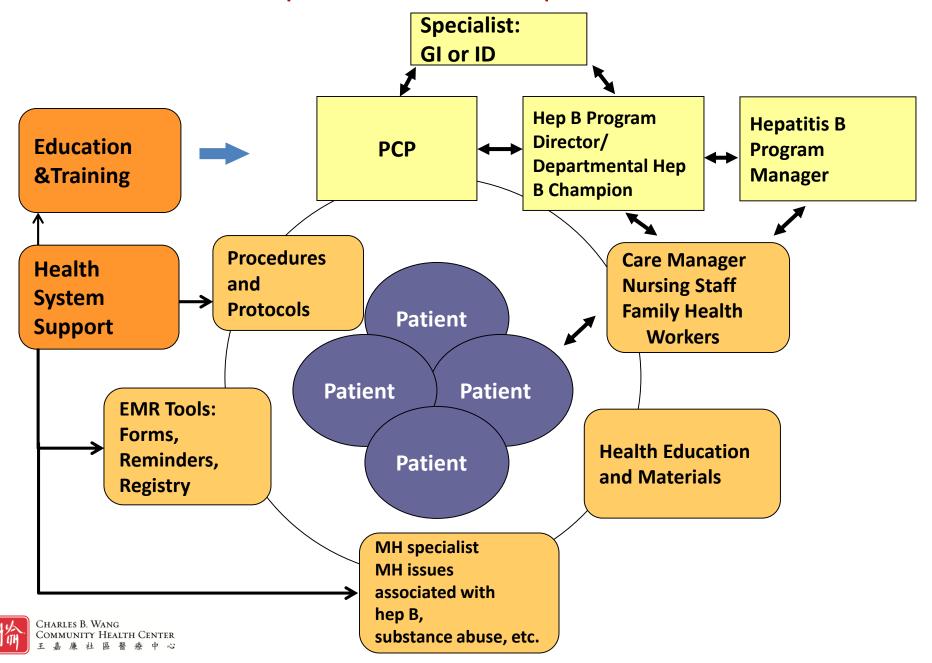
CDC Testing for Hepatitis B Virus Infection During Pregnancy Flowchart for Prenatal Providers

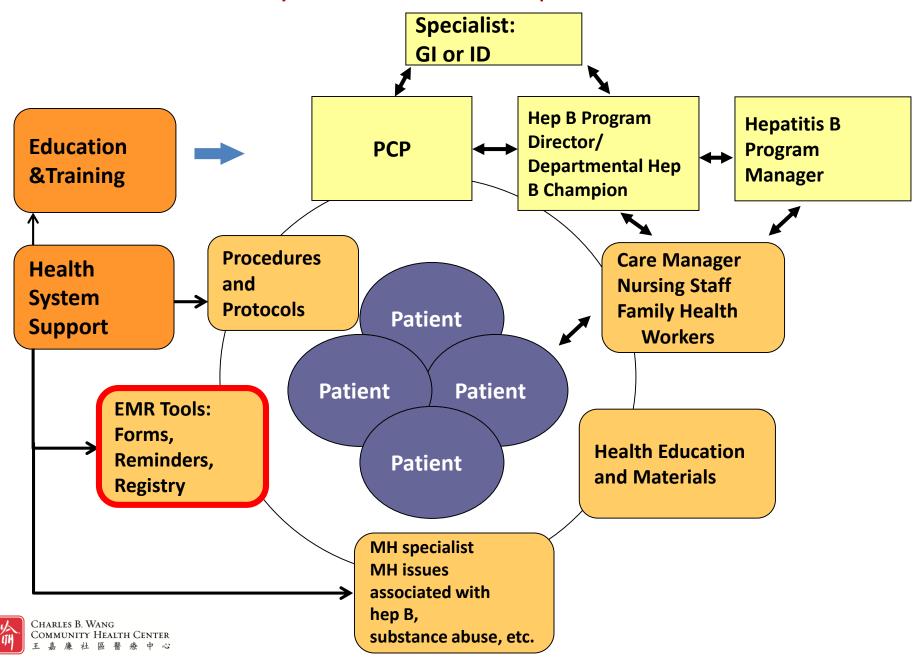
NY State law requires HBsAg to be tested for EVERY PREGNANCY

Testing for Hepatitis B Virus Infection During Pregnancy Flowchart for Prenatal Providers

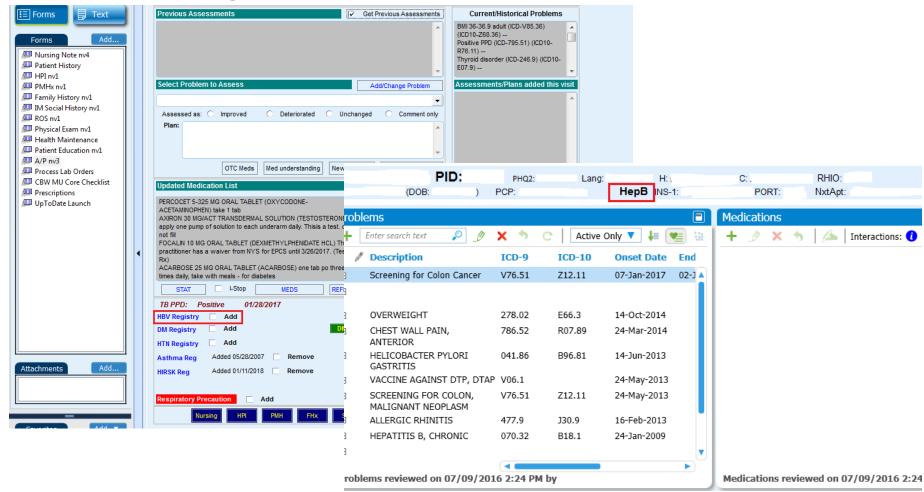




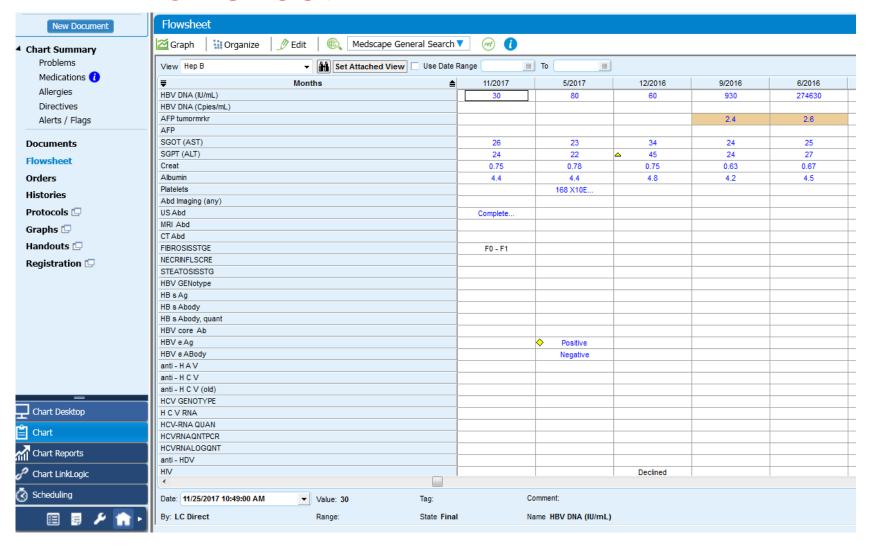




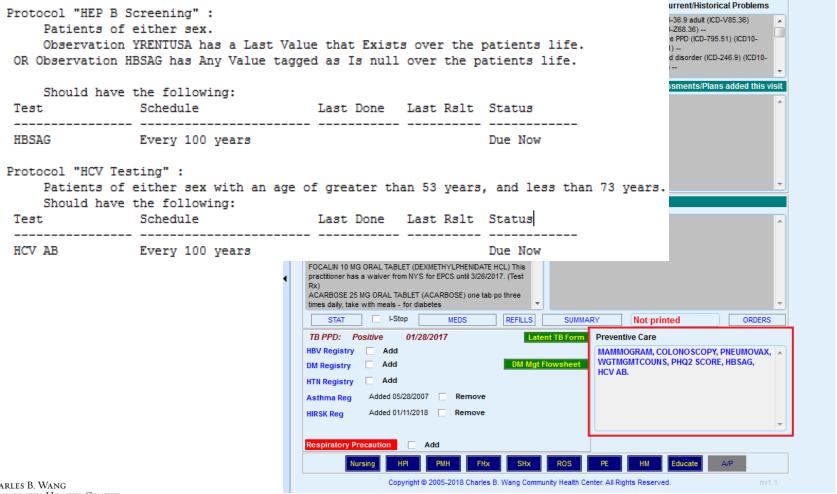
HBV Management EMR Support HBV Registry

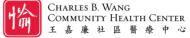


HBV Management EMR Support HBV Flowsheet

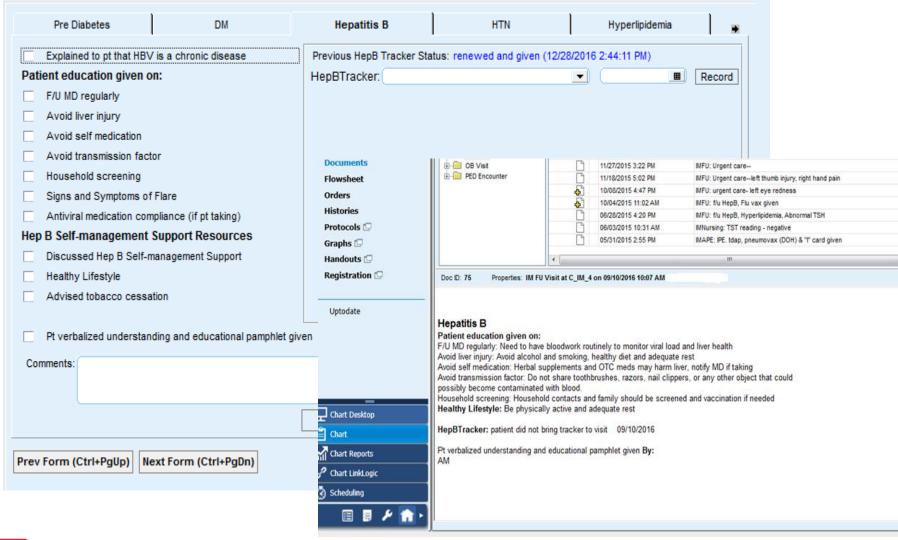


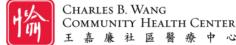
HBV Management EMR Support HBV Screening Prompt

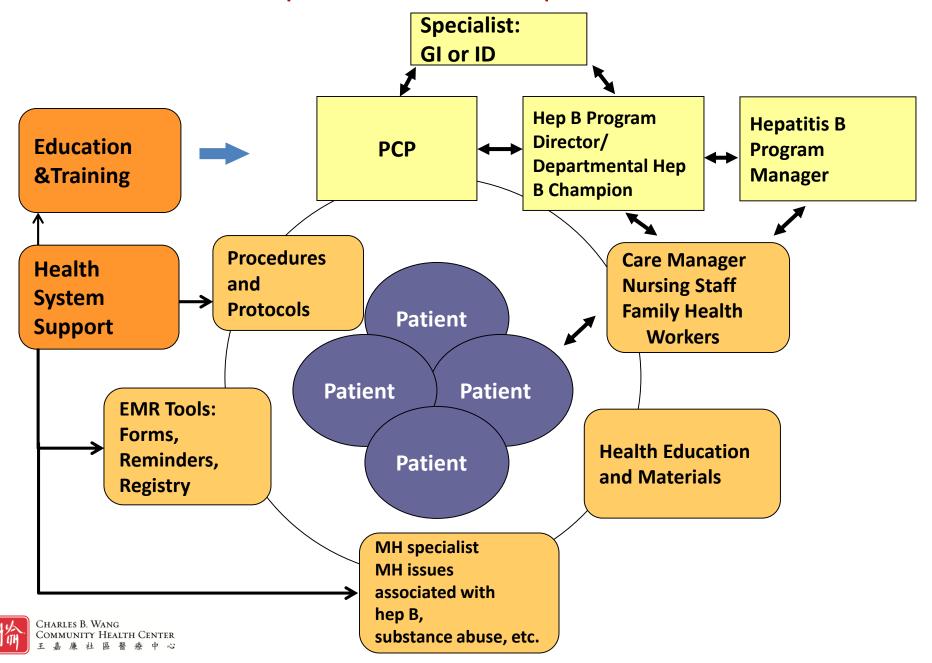


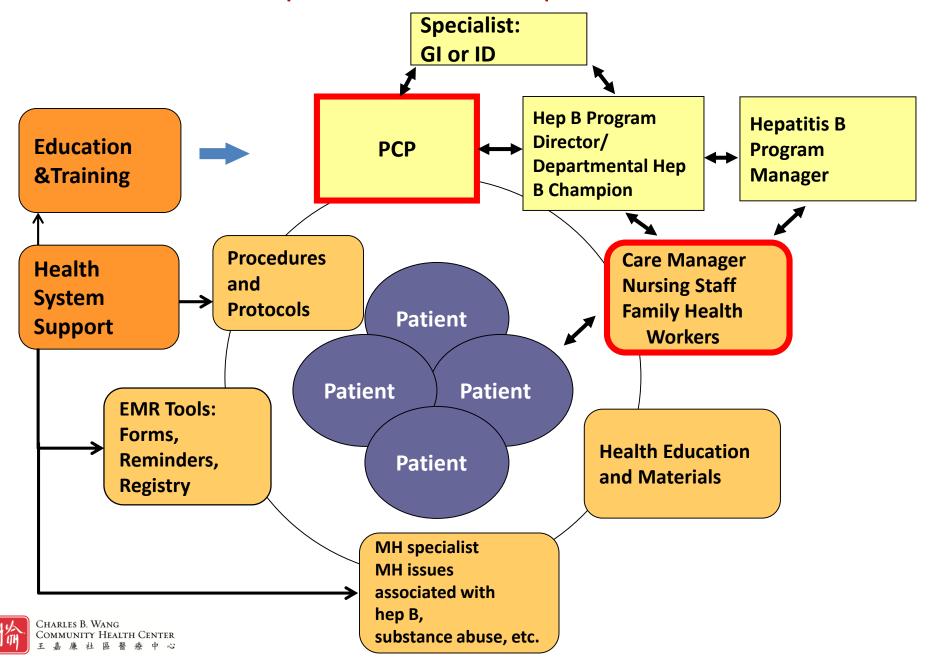


HBV Education Reminders in EMR

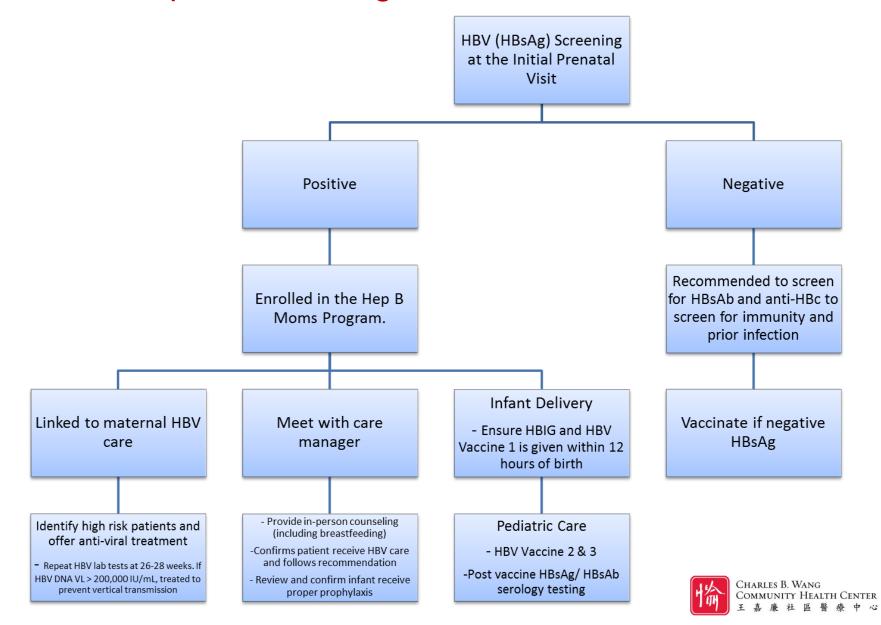








CBWCHC Hep B Moms Program



Peripartum HBV Surveillance

Pregnancy

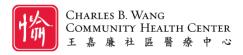
- Notify mother about hepatitis B positive status and link to IM care
- · Counsel and educate mother as well as contact about hep B
- HBV evaluation tests (HBV DNA VL, LFT, HBeAg)

24-28 week Repeat blood tests (HBV DNA VL, LFT, HBeAg)

3rd Tri

- Start Tx if VL > 200,000
- Provide education on medication compliance, safety on breast feeding, notify to get baby serology (HBIG)

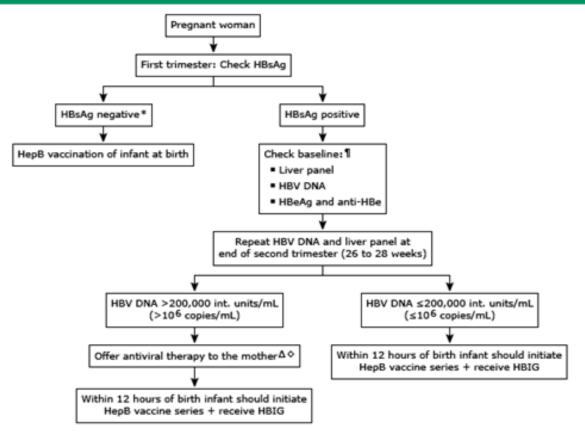
Postpartum Contact mothers to come back for Hep B follow-up and continue hep B care



UptoDate.com Algorithm for Hepatitis B Virus during Pregnancy

Figure 1. Adapted from "Algorithm hepatitis B virus during pregnancy," www.uptodate.com., July 2015

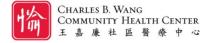
Algorithm for hepatitis B virus during pregnancy





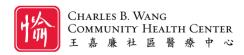
Indications for Antiviral Treatment to Prevent HBV Vertical Transmission

- Women with viral loads of >200,000 IU/ml are recommended for antiviral treatment to decrease the risk of transmission to the baby; however, there must be a discussion on the risks and benefits of antiviral treatment.
- Tenofovir (Pregnancy Category B): Recommended drug due to efficacy to reduce viral load and decreased likelihood of resistance (compared to Telbivudine and Lamivudine)
- Antiviral treatment is recommended to be initiated at least 10 weeks prior to delivery
 - Singleton pregnancy: 28-30 weeks GA
 - Twin pregnancy: 24-26 weeks GA
 - Triplet pregnancy: 20-22 weeks GA
- If the sole goal is to prevent vertical transmission, then antiviral therapy in most cases is discontinued postpartum from time of birth to 3 months after delivery. When treatment is discontinued, women should be monitored at least every 3 months for 6 months for hepatitis flares.



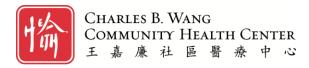
Hep B Mom Database

1 PID V Name 59 70 71 72 73 74 75 76 77 88 80 81 82 83 84 84 85 86 87 89 90 90 91 91 92 93 93 94 95 96 97 97 98 98 99 90 00 00 00 00 00 00	2.0E+01 2.0E+01 5.0E+01 2.2E+02 7.3E+02 0.0E+00 9.0E+01 2.0E+01 3.0E+02 0.0E+00 2.0E+01 2.9E+01	Viral3dt v .10/19/2016 .9/27/2016 .7/27/2016	Viral 3 (U) v 2.0E+01 6.0E+01	25 31 26 24 31 24 22 25 30 25 23	01/05/2016 03/14/2016 02/05/2016 05/12/2016 01/21/2016 05/28/2016 05/14/2016 01/14/2016 02/25/2016	17 28 27 12 26 12 25 28	12/28/2015 03/14/2016 01/29/2015 12/05/2012 01/21/2016 05/15/2014 05/14/2016 05/16/2013	Negative Negative Negative Negative Negative POSITIVE	03/15/2016	Medication v	GI ▼ 8/4/2015	IIIM before pt v v 01/21/2013 09/12/2014 12/05/2012 06/23/2010 01/10/2012 11/15/2012	visit in this pr(v 01/05/2016 03/13/2016 03/13/2016 01/18/2016 01/21/2016 02/03/2016 05/21/2016
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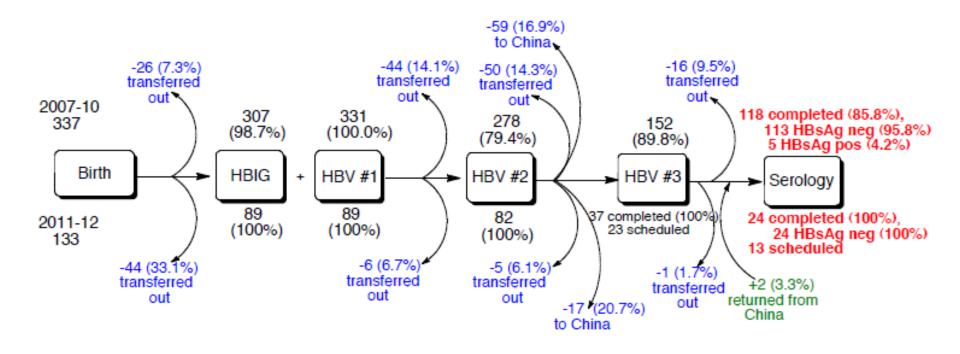


Newborn Vaccination and Prophylactic Immunoglobulin to Prevent HBV Vertical Transmission

- Proper prophylaxis and completion of the hepatitis B vaccine series can reduce neonatal infection by 95%. New York State Public Health Law mandates that all pregnant women be tested for hepatitis B infection and that all infants born to infected mothers should be given HBIG and hepatitis B vaccine within 12 hours of birth.
- If HBIG is not given within the recommended 12 hours, it should be given to the infant as soon as possible but no later than 7 days after birth.
- The hepatitis B series should be completed at 6 months of age and infants should receive follow-up HBsAg and antibody to hepatitis B surface antigen (anti-HBs) testing at age 9-12 months to determine if immunization was successful

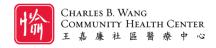


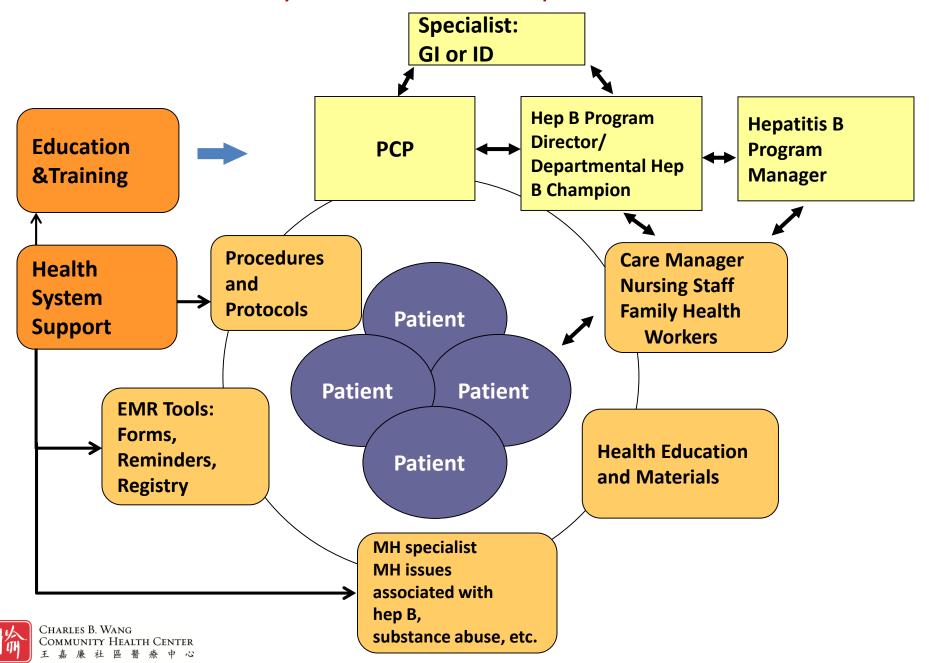
Infant Follow up: HBV Vaccine Completion and Post Vaccination Serologic Testing (PVST)

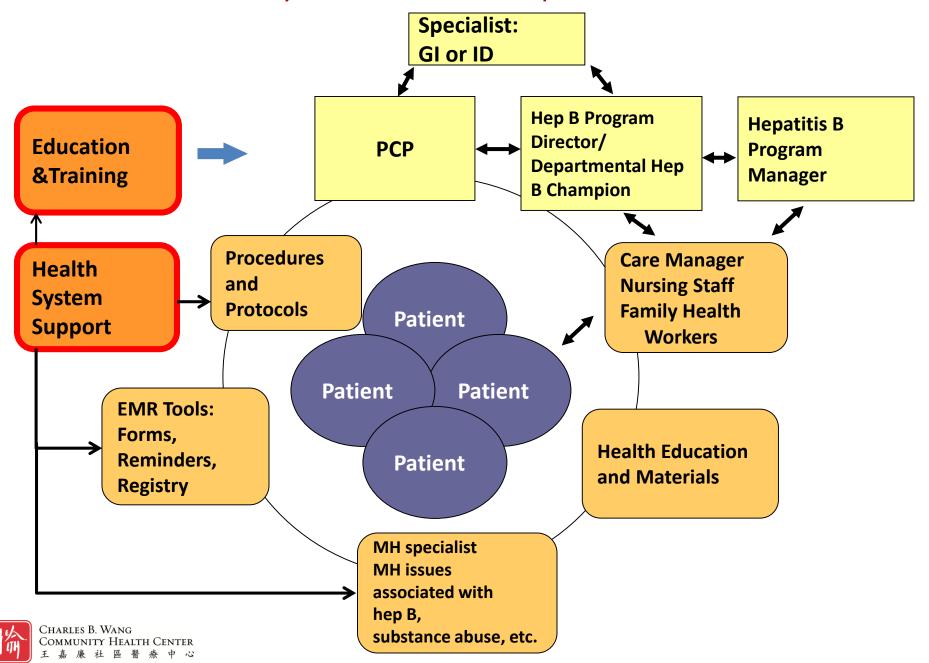


Infant HBV Vaccination and Post Vaccination Serologic Testing (PVST) Tracking Database

∡ H	1	J	K	L	M	N	0	Р	Q	R	S	Т	U	V
1 NBdt	Age	NBpid	NB Name	C/S or NSVD	Complication/Risk	HBIG	HEPB#1		HEPB#2		HEPB#3		Serology	Serology Results
2				C/S		10/14/10	10/14/10		11/18/10	1	ch5/15/2011	-1	03/18/14	HBsAg-
3				NSVD		03/05/11	03/05/11		04/06/11		09/13/11		03/17/12	HBsAg-
4				NSVD	Elective induction	05/01/11	05/01/11		06/06/11	x				
5				C/S	previous myomecto	06/01/11	06/01/11		07/14/11	x				
6						PMD	PMD							
7				NSVD		05/02/11	05/02/11		07/07/11		11/03/11		02/02/12	HBsAg-
8				C/S	pre-eclampcia, Pret	05/11/11	05/11/11		06/16/11		11/16/11		02/22/12	HBsAg-
9				c/s		05/29/11	05/29/11		06/29/11		12/01/11		03/01/12	HBsAg-
10						PMD	PMD							
11						PMD	PMD							
12				C/S		07/05/11	07/04/11		08/15/11		01/04/12		04/11/12	HBsAg-
13				C/S	Preterm Labor	04/17/11	04/17/11		05/18/11	1	ch10/25/2011	-1	07/21/15	HBsAg-
14				NSVD		05/15/11	05/15/11		06/16/11		11/16/11		02/16/12	HBsAg-
15				NSVD		06/30/11	06/30/11		08/16/11	X				
16				NSVD		04/27/11	04/27/11		05/31/11		11/14/11		02/27/12	HBsAg-
17				RC/S		07/14/11	07/14/11	X						
18				RC/S		07/02/11	07/02/11		08/03/11		01/11/12		04/11/12	HBsAg-
19				NSVD		06/30/11	06/30/11	X						
<mark>20</mark> 21				C/S		07/13/11	07/13/11		08/12/11		01/16/12		04/22/12	HBsAg-
						PMD	PMD							
22				C/S	pleural effusion	07/16/11	07/16/11		08/19/11	x				
23				NSVD		07/27/11	07/27/11		08/30/11		01/31/12		04/27/12	HBsAg-
24				NSVD		07/19/11	07/19/11		08/22/11		01/30/12		04/30/12	HBsAg-
25				NSVD		07/02/11	07/02/11		08/01/11		01/11/12		04/16/12	HBsAg-
26				NSVD		07/22/11	07/22/11		08/24/11	1	ch3/14/2012	-1	12/28/12	HBsAg-
27				NSVD		05/25/11	05/25/11		06/29/11	1	ch12/16/2011	-1	02/22/12	HBsAg-
28				C/S		04/24/11	04/24/11		05/25/11	1	ch10/25/2011	-1	01/16/15	HBsAg-
29				C/S		08/30/11	08/30/11		10/03/11		03/05/12		05/07/12	HBsAg-
30				NSVD		06/17/11	06/17/11	X						

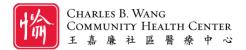






Monthly QA Meetings

- Inter-departmental (IM-OB/GYN-PEDS) monthly meeting to ensure that the Hep B Moms...
 - 1) Got appropriate HBV DNA VL testing at 24-28 weeks
 - 2) Started treatment if needed at 28-32 weeks
 - 3) Meet in person and was counseled
 - 4) Infants were tracked and ensured they received HBIG and HBV Vaccine 1, 2, 3 as well as 9-12 month serology
- Discuss specific or complicated cases
- Discuss changes in guidelines



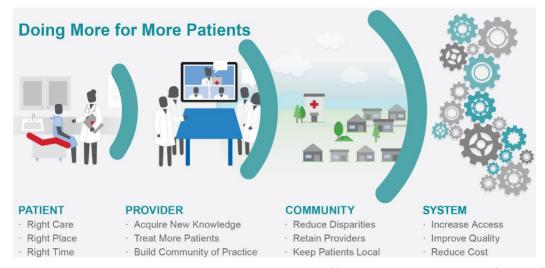
Partnership with NYC DOH

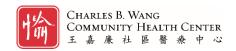
- All positive hep B pregnant woman are reported to the NYC DOH.
- DOH reinforces and calls mom to ensure infant is vaccinated and PSVT test is done at 9-12 months.
- Reaches out to household contacts and encourage screening and vaccination
- As of Dec 2017, CBW developed a consent form in agreement with DOH to obtain vaccination and serology test results of infants who were lost to follow up or follow up elsewhere

Project ECHO: HBV ECHO: Reducing Perinatal Transmission

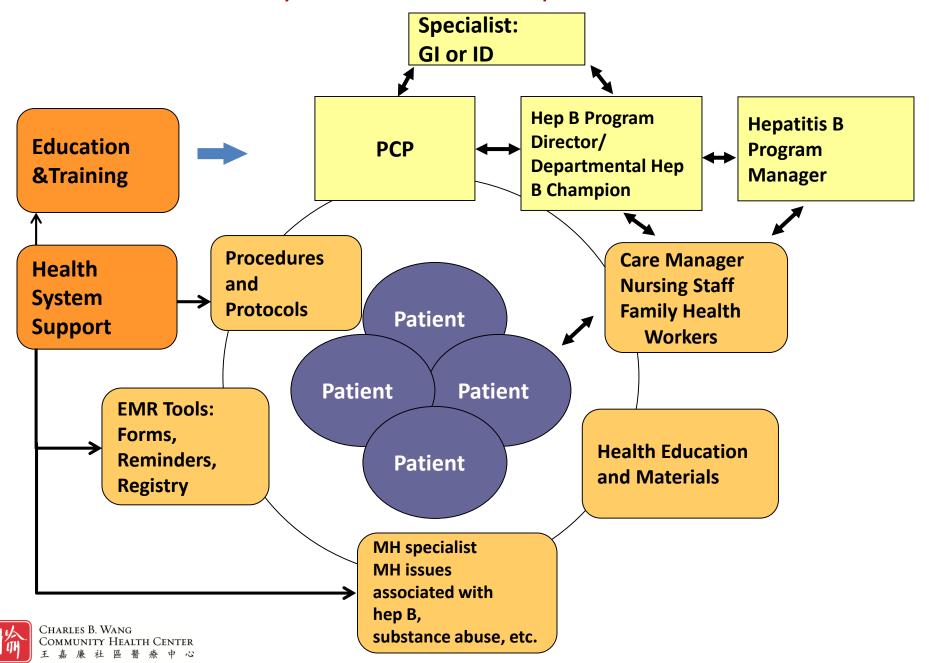


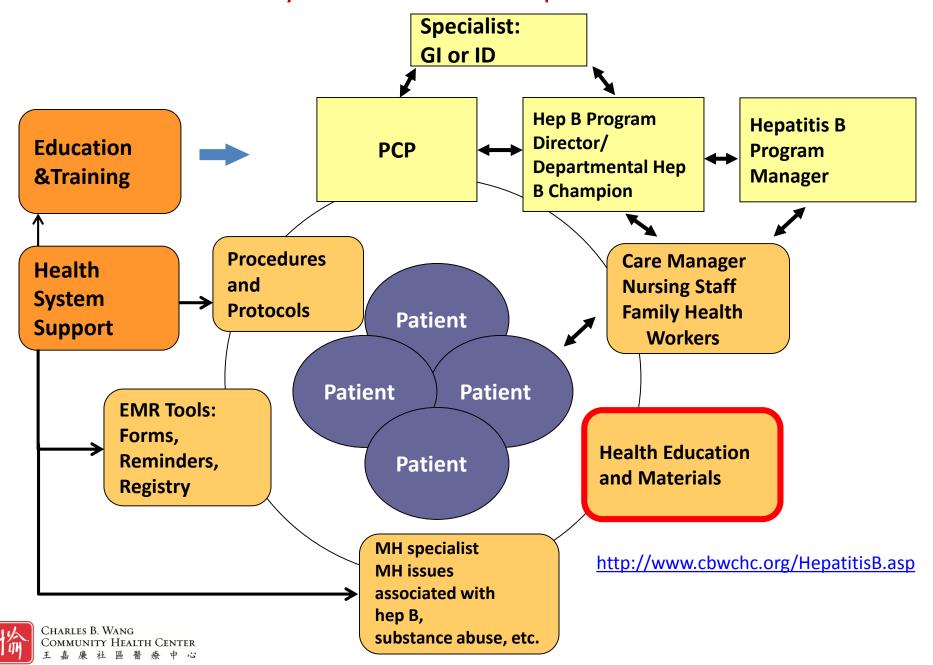
- Review complex patient cases and receive mentoring and feedback from specialists
- Share models or HBV topic specific lectures followed by Q&A
- Membership to Virtual Learning Community
- Links experts and specialist teams from an academic hub to primary care providers in local communities through the use of technology
- Primary care clinicians and other healthcare professionals, the spokes in our model, become part of a rich, learning community











CBWCHC Hep B Moms Program – Perinatal Care Management

HepB Moms Program - Perinatal Care Management

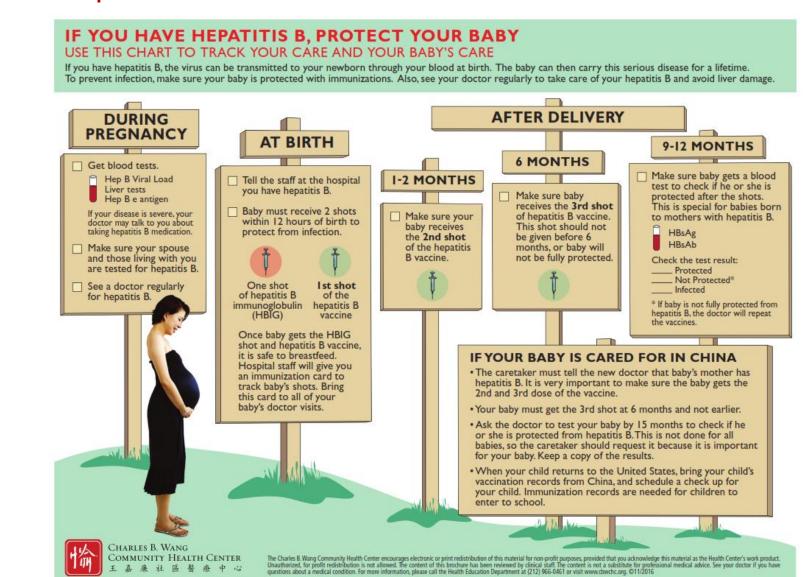
Name:	PID#:	Provider:	EDD:							
	Date of Birth:	IM Initial:	Counseling Date:							
ASSESSMENTS		Education Provided by:								
When are you first aware of havin	g HBV?									
Explained to patient that HBV is a ch	ronic disease and usually lifelor	ng. Liver model demonstration:								
Most people with HBV do not have s	igns or symptoms, and HBV		→ Cirrhosis 肝硬化 → Liver Cancer 肝癌							
can lead to cirrhosis or liver cancer.										
Seen IM doctor for HBV before?	□ yes □ no	□ at CBWCHC □ other								
If yes, HBV medication given? □ yes □ no										
Family members w/ HBV or liver of	disease?	Household contacts being so	creening and vaccinated?							
Husband		□ screened □ vaccir	nated not sure DOH letter							
Parents		□ screened □ vaccir	nated not sure DOH letter							
Siblings		□ screened □ vaccir	nated not sure DOH letter							
Others										
Education:										
☐ F/U with MD regularly: Need to have blood work routinely to monitor viral load and liver health										
☐ Avoid liver injury: Avoid alcohol and sr	moking, healthy diet and adequate	rest								
□ Avoid self medication: Herbal supplements and OTC meds may harm liver, notify MD if taking										
□ Avoid transmission factor: Do not share toothbrushes, razors, nail clippers, or any object that could possibly become contaminated with blood.										
☐ Signs and Symptoms: Notify provider	if develop nausea, vomiting, abdo	ominal pain, jaundice (skin & eyes	turn yellow)							
☐ Antiviral medication compliance (if pt t	aking): Take medications daily and									
HBV Tracker: □ Issued	□ Explained	HBV Mom's Roadmap: □ Is	sued Explained							
Plans for baby:										
□ Send to China: When Caretaker □ w/ HBV (remind to have screening done)										
□ Pediatrician in US:CBWCHC Other										
*Recommend baby to stay in U.S. (or until v	accination done as seen in Roadmap)									
Future Appointments:										
Blood work (HBeAg, VL, ALT, HAV	V & HCV)									
Ultrasound (RUQ)										
RTC in 3 rd trimester (28-32 wks)										

Newborn PID#: _____ Date of Birth: ____

Newborn Name:



CBWCHC Hep B Moms Roadmap and Protecting Your Baby from Hepatitis B



CBWCHC "The Test" Comic















CBWCHC "B Healthy" Personal Record

心肝寶貝

悉心保養肝臟

B Healthy

Keeping your liver healthy

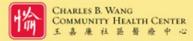
Your personal record

姓名:	诊症號碼:
Name:	PID:

定期去看醫生是很重要的。謹請按照預約時間做乙型 肝炎復診,並帶上這張卡。醫生會把你的測試結果記 錄在卡上,讓你可以監察肝臟的健康狀況。

Seeing your doctor regularly is important. Remember to come to your scheduled hepatitis B follow up visits. Bring this card with you. Your doctor will record your lab results on the card. This will help monitor the health of your liver.

© 8/2010



乙型肝炎病毒(HBV)血液測試結果 YOUR HEPATITIS B VIRUS (HBV) BLOOD TEST

JF	R HÉPATITIS B V	/IRI	JS (HBV) BLOOD TEST	TEST	s TC
Яe	乙肝表面抗原 HBsAg Hepatitis B Surface Anti	gen	如果遠項測試結果呈陽性(+),表明你已經赎染了乙肝病毒。 If this test result is positive (+), it means that you are infected with the hepatitis B virus.	日期 Date	MALT ALT
明e	乙肝表面抗糖 HBSAb Hepatitis B Surface Anti	body	如果這項測試結果呈陽性(+),表明你對乙肝病 毒產生免疫力。		
			If this test result is positive (+), it means that you are immune to the hepatitis B virus.	日期 Date	Z.FI HBV
				Date	HUY
Я e	乙肝 "e" 抗原 HBeAg Hepatitis B "e" Antigen	(+) 街村 If the bloc like	果 這 項 測 試 結 果 呈 陽 性 · 通常 表明 你 血液 内 的 病 效量 較 高 。 常 " e " 抗原 呈 华 · 通常 稱 為 「 大 三 陽 」。 is test is positive (*) . it often ins the amount of virus in your d is higher. You may be more ly to spread the virus to others. m " e" antigen is *, it is often " e" antigen is *, it is often the properties of the positive."		
		_		日期	超雪
Яe	乙肝 "e" 抗體 HBeAb Hepatitis B "e" Antibody	(+	果這項測試結果呈陽性),表明你的血液內病毒 量較低。當"e"抗體呈陽 (而"e"抗原呈陰性),通	Date	Ultr
		If me in	稱為「小三陽」。 this test is positive (+), it can ean that the amount of virus your blood is lower. When "e"	日期 Date	Нер
**		is	tibody is + ("e" antigen is -), it often described as "small three sitive."		
				日期 Date	甲 AFP
1	〇 治療	12	54		



治療記錄

醫生將根據你的檢查報告、健康情 況與家族史來決定你是否需要治療。

TRACK YOUR TREATMENT

Your doctor will decide if treatment is needed based on your test results, health condition and family history.

接受檢查,瞭解肝臟狀況 TESTS TO CHECK THE HEALTH OF YOUR LIVER

日期 Date	轉至期水平 ALT (U/L)	肝功能測試能夠衡的程度。 量你的肝臟發英兒 上升,就表明你的 肝臟已經受到影響。 Liver function tests measure inflammation in your liver. If the result is elevated, it means your liver is affected.						
日期	乙肝病毒含量		這項測試能夠顯示					
Date	HBV Viral Load (IU/mL	你血液內乙型肝 炎的病毒含量量 如果病毒含量重始 上升,醫生會雖默 況。 This test shows how much hepatitis B virus you have in your blood. If your viral load starts to increase, your doctor						
日期 Date	超聲波 Ultrasound	這能夠幫助檢測肝 硬化或肝癌。 It can help detect cirrhosis or cancer in the liver.						
			the tives					
日期 Date	Hepatitis C		Those with hepatitis B should test for hepatitis C.					
日期	甲胎蛋白		10° 100 300 5-9 60; 40; 80° 06;					
Date	AFP (ng/mL)	這項測試能夠幫助 檢測肝穩。 This test can help detect liver cancer.						
	CONTROL OF THE REAL	ton con	CALABORIA A AA DE PERSONA A					
日期 Date	甲型肝炎抗體 Hepatitis A Ab (Hepatitis A Antibody)	(+) · 生免 If this it me	· 這項測試結果呈陽性 表明你對甲肝病毒產 · 疫力。 s test result is positive (+), eans that you are immune e hepatitis A virus.					
力。 If the to the	如果測試結果呈除性(-),表明你對甲型肝炎沒有免疫能力。你應接受兩次甲肝疫苗注射以保護你的肝臟。 If the test result is negative (-),it means that you are not immune to the hepatitis A virus. You should get 2 Hepatitis A vaccinations to protect your liver.							

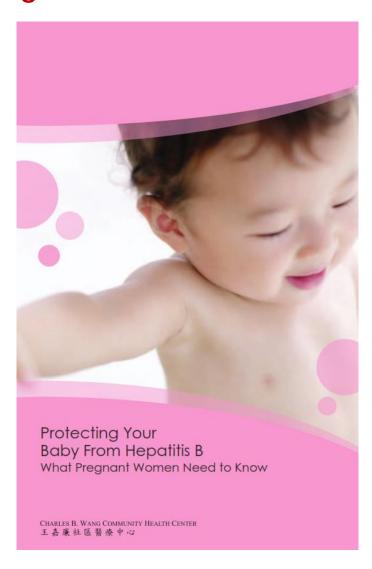
第二次疫苗注射日期

Second shot:

藥物名稱 Medication Name	劑量 Dosage	開始日期 Start Date	結束日期 End Date

第一次疫苗注射日期 First shot:

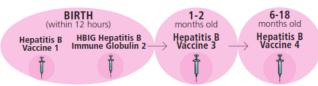
CBWCHC Protecting Your Baby from Hepatitis B – What Pregnant Women Need to Know



Even if you have hepatitis B, You can have a healthy baby!

If you have hepatitis B, your baby needs an extra shot called Hepatitis B Immune Globulin (HBIG) to protect him or her against the infection. There should be a total of 4 shots by the time your baby is 6 months old. Your baby will have more than a 95% chance of being free of hepatitis B.

Remember, your baby needs to get the HBIG shot and the first vaccine shot within 12 hours after being born.



Follow these steps to protect your baby against hepatitis B:

- Tell your doctor and the hospital that you have hepatitis B before you give birth.
- O Make sure your baby gets the two shots within 12 hours after birth.
- Tell the doctor who will care for your baby that you have hepatitis B.
- O Be sure that your baby gets another two shots by the age of 6 months.
- O Make sure your baby has a blood test between the ages of 9 months and 18 months to see if he or she has been protected.

It is safe to breastfeed your baby!

If your baby gets the HBIG shot and hepatitis B vaccine within 12 hours of birth, it is safe to breastfeed right away. Take good care of your nipples to avoid cracking and bleeding. Ask your doctor if you should still breastfeed if you have cracked nipples or open sores on your breast.

Last, don't forget to see your doctor regularly about your hepatitis B condition. Take medicine as prescribed by your doctor. Do not take any herbal products or medicine without telling your doctor. They may damage your liver.



Hepatitis B and Breastfeeding

- Although HBsAg can be detected in breast milk, there is no evidence that HBV can be transmitted by breastfeeding. Per WHO and CDC, breastfeeding is acceptable and encouraged
- Among infants receiving post-exposure prophylaxis, there is no known increased risk of infection among breastfed infants.
- Immunization of the baby at birth should protect the infant from possible exposure to HBV from cracked or bleeding nipples. All mothers who breastfeed should be instructed on proper nipple care.
- May consider stopping anti-viral treatment after delivery if the mother wishes to breastfeed in order to minimize exposure of the medication through breast milk.



Hep B Mom Program 2011-2017 Summary

557 women completed the program and delivered

145 (26%) on antiviral treatment during pregnancy

552 babies born to these mothers

- 83.5% (461) completed vaccine series and received PVST while 16.5% (91) were lost to follow up
 - 319 babies completed vaccine series and received PVST at CBWCHC
 - 142 babies completed vaccine series and received PVST offsite (results obtained through NYCDOHMH in aggregate)
- Of the 83.5% with PVST, no known cases of HBV vertical transmission



Conclusions & Recommendations

- Comprehensive management of HBV+ pregnancies involves coordination between obstetrics, HBV provider, delivery hospital, pediatrics and local department of health
- Accurate information exchange amongst all providers is crucial
- Ideally, coordinate data exchange w DOH HBV perinatal program, clinical laboratories
- Culturally relevant patient education can engage mothers and help ensure recommendations are followed

For more information

CBWCHC Website: http://www.cbwchc.org/HepatitisB.asp

Contact:

Janice Lyu, MS

Senior Hepatitis B Program Associate

Email: jlyu@cbwchc.org

